GRIMRADA system test.
— Design analysis & print to Thew —
— Test parameters set by contractor.
— Build concurrently.
— What paperwork required.

NPIC/TDC/A-15-65

TECHNICAL DEVELOPMENT COMMITTEE

AGENDA

Time: 1030, 31 March 1965

Place: 4N 412

1. Announcements

a. Approval of Minutes.

b. New Proposals: Ten new proposals, listed below, have been received since the last meeting. If you have any interest in reading these proposals they are available in the Plans and Development Staff.

110-65 Design and Fabricate Engineering Prototype Model of Anamorphic Zoom Eye Piece and 100 Additional Units, [redacted] 25X1

111/65 Image Intensifier Screen, [redacted] 25X1 25X1

112/65 Prototype Step & Repeat Contact Printer & Processor for 3M Diapositive Film, [redacted] 25X1 25X1

113/65 R&D Program Involving Image-Intensifying Devices, [redacted] 25X1

114/65 Development of an Automatic Target Recognition System, [redacted] 25X1

115/65 Technical Proposal for a Motorized Film Rewind Mechanism, [redacted] 25X1

116/65 Proposal to Fabricate Anamorphic Zoom Eye Pieces, [redacted] 25X1

117/65 Study Program for the Improvement of Imagery in Rear Projection Viewers, [redacted] 25X1 25X1

SECRET

118/65 Proposal for the Design and Fabrication of a Motorized Film Rewind Unit, [redacted] 25X1

[redacted] 25X1

119/65 Proposal for a Modulated Light Viewing System, Phase II, [redacted] 25X1

[redacted] 25X1

c. Announcement on Contract [redacted] Chip Processor, [redacted] 25X1

As the result of [redacted] visit to the contractor's plant on 15-16-17 March 1965, a contract extension of approximately one month and a request for additional funding is anticipated. This is due to two minor changes suggested by the monitor: (1) expand film magazine from 16-mount capacity to 36-mount capacity; (2) change the design of the film chip input station so that the film is dropped rapidly into the developing solution rather than being carried in slowly. This will prevent over-development on that end of the film chip entering the developer first. The time extension will mean delivery about 30 April 1965. The amount of additional funding which may be requested is unknown, but is estimated to be approximately $1,000 to $1,500.

2. New Business

a. Non Reversible Recording Feasibility Study Continuation, [redacted]. (PSD, PD, CSD, PAG, PID, TID, IPD) 25X1

b. Magnetic Tape Recorder, [redacted] (OD, PAG, PID, TID) 25X1

c. Data Block Reader, [redacted] 25X1

[redacted] (IPD, TID, PAG, PID, CSD) 25X1

d. Electro-Color Printer Processor, [redacted] (PSD) 25X1

e. Reports on Research in Vision and Related Areas, [redacted] - 25X1

[redacted] (PAG, PID, TID)

3. Proposal Evaluations

The following proposal has been evaluated as of no interest at the present time.

120/65 Semi-Automatic Film Encoder, [redacted] 25X1
(Rejected because it is not appropriate to the development of the Step & Repeat Printer.)

Distribution:

1 - Chairman, TDC
1 - Exec. Dir.
1 - Asst. for Admin.
1 - Chief, SS
1 - Chief, MSS
1 - SS/Security Br.
1 - SS/Logistics Br.
1 - MSS/BFAB
1 - Asst. for OPS
1 - Dep. Asst. for PA
1 - Chief, CSD
3 - Chief, PD
1 - Chief, PSD
1 - Chief, TID
1 - Chief, IPD
1 - Chief, CIA/PID
1 - Chief, SPAD
1 - [redacted] 25X1
1 - [redacted]

(When Filled In)

R & D CATALOG FORM

DATE: 26 March 1965

1. PROJECT TITLE/CODE NAME

Data Block Reader

2. SHORT PROJECT DESCRIPTION

Data Block Reader for reading and decoding binary information recorded on photographic roll film.

25X1

5. CLASS OF CONTRACTOR

Manufacturer

6. TYPE OF CONTRACT

Fixed Price

7. FUNDS

FY 19 $

8. REQUISITION NO.

NA

9. BUDGET PROJECT NO.

NP-I-1

25X1

10. EFFECTIVE CONTRACT DATE (Begin - end)

June 1965 - May 1966

12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION

DDI/NPIC/ 25X1

13. REQUIREMENT/AUTHORITY

For reading and decoding binary or similarly coded information placed on the film prior to processing.

14. TYPE OF WORK TO BE DONE

Engineering Development

15. CATEGORIES OF EFFORT

MAJOR CATEGORY	SUB-CATEGORIES
Information Storage & Retrieval Equipment	Information Retrieval Electro-optical-mechanical

16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC.

One each prototype binary reader, decoder, and associated readout equipment. The current in-house capability is limited to one binary configuration only.

17. SUPPORTING OR RELATED CONTRACTS (Agency & Other)/COORDINATION

There are no supporting or related contracts; coordination has been accomplished with AMS. This project has been discussed with IPD and TID. It is of indirect significance to PAG AND PID.

18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT (Continue on additional page if required)

The requirement for a Code Matrix Reader to provide rapid readout of auxiliary data recorded in digitally coded form in the margin of each photographic frame has been anticipated by the operational units. Accordingly, industry has been surveyed to ascertain the possibility of obtaining "shelf items" or modifying existing readers. Only one company was found to have such an instrument; however, it is of a fixed format design which is not subject to redesign for handling varying matrices. (Contd)

19. APPROVED BY AND DATE

OFFICE	DEPUTY DIRECTOR	DDCI

(1-13)

R & D CATALOG FORM (Continued)

18. Alternatively, manufacturers were solicted for proposals meeting our requirements. The proposal submitted by FSDS meets the parameters set forth to develop a data block reader designed for maximum flexibility.

The proposed design incorporates a linear array of photo-diodes which combine the functions of spot location and photo sensitivity. This is a considerable simplification over the flying spot scanner implementation since high voltage accelerating anodes and highly stable sweep voltages are not required.

The device to be used is a single monolithic silicon crystal structure. The spacing of the diodes is extremely accurate, so that the output of each diode in the linear array is presented in the exact pattern of light and dark spots passing over the linear axis. Each diode is individually wired and the signal pre-amplified. By this means the diode array scans and readsout the data block as it passes under the sensory matrix.

The reader will automatically locate the data block, read the data and record it on magnetic tape or punched cards in the IBM format. The reader will be capable of reading four types of data blocks to be specified by the customer. Accommodation of dot size and density variations will be in accordance with MIL-Std 782-A "Tactical Reconnaissance Data Marking". All film sizes from 35mm through $9\frac{1}{2}$ inches in rolls holding up to 1000 feet will be accepted. The film transport will carry the film at a constant velocity of 60 feet per minute. The operator will determine which type of data block is to be read and connect the proper head by a selector switch. After loading the film the read head is aligned by two magnified hairlines and oriented in the same direction as the data block. After the read button is pressed, all the subsequent operations are automatic. The configurations which can be handled by this reader will meet the requirements for readout of two different SI packages as well as the standard DOD data block.

Appropriate security clearances and channels are already in existence at FSDS.